L 22282-66

ACC NR: AP6007263

2

electron paramagnetic resonance signal was observed from fibers drawn from aluminum-boron silicate, quartz, multicomponent silicate, and oxygen-free glass--arsenic trichloride. In all cases, the spectra from the fibers (electron paramagnetic resonance) was compared with corresponding data from the starting glass. This comparison between the electron paramagnetic resonance spectra of the fibers and the starting glasses bears witness to the partial breaking of the covalent bonds in the formation of the fibers. The constant width of the electron paramgnetic resonance lines and the lack of change in the g-factor in the transition from the glass to the fibers can be regarded as a proof of the absence of any molecular orientation in the fibers. Orig. art. has: 3 figures and 1 table.

SUB CODE: 11, 20/ SUBM DATE: 05Jul65/ ORIG REF: 007/ OTH REF: 002

Card 2/2 nst

KHESIN, M.I.; SHEVELEVICH, S.A.

Furaplast, a new preparation for the treatment of minor traumas. Vest. derm. i ven. 38 no.3:89 Mr '64.

(MIRA 18:4)

1. Zdravpunkt Khar'kovskoy parfyumernoy fabriki.

SHEVELIN, B.N., kandidat tekhnicheskikh nauk; GOLOVANOVA, A.P., inzhener.

Clean stamping of nonferrous parts in friction presses. Sb. st. NIIKHIMMASH no.19:22-40 '56. (MLRA 10:3)
(Forging)

SHEVELINA, Z.N.

Purification of waste water with ash-removal waters of heat and electric power plants. Neftepер. i neftekhim. no.5:17-19 '63.
(MIRA 17:8)

1. Syzranskiy neftepererabatyvayushchiy zavod.

L 14471-65 Pb-4 AMD
ACCESSION NR: AP4041821 S/0239/64/050/007/0901/0906

AUTHOR: Shevel'ke, Ye. A. B

TITLE: Heat control and pyrogenic reactivity of rats

SOURCE: Fiziologicheskiy zhurnal SSSR, v. 50, no. 7, 1964, 901-906

TOPIC TAGS: homoiothermy, body heat control, pyrogenic reactivity, white rat, body temperature, rectal temperature, subcutaneous spine tissue temperature, oxygen consumption, chemical metabolic reaction, physical metabolic reaction

ABSTRACT: With well developed homoiothermy in the higher animals attributed primarily to metabolic reactions, the present study investigated the pyrogenic reactivity of white rats in relation to the physical and chemical components of body heat control. 377 experiments were conducted on 95 white rats to determine their reactivity to a killed bac. mesentericus culture (1 ml/kg) and to pyrogenal (10 mkg/kg) administered intravenously, subcutaneously, and intramuscularly. Body, rectal, and subcutaneous spine tissue

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temperature changes and oxygen consumption were measured at intervals of 30 min to 1 hr for several hours after pyrogen administration. Chemical and physical functional capacities of body heat control were determined by oxygen consumption and body temperature changes after administering alpha-dinitrophenol (0.02 to 0.03 g/kg), after 1 hr exposure to overcooling (0.5°C). Pyrogenic reactivity was found particularly markedly expressed when vascular receptor zone tissues first come into contact with the pyrogens. A distinct pyrogenic reaction is observed with intravenous pyrogen administration and lesser reactions are observed with subcutaneous or intramuscular pyrogen administration. The ratios between rectal and subcutaneous spine tissue temperatures show the role vessel tone reaction plays in body temperature increase. With the introduction of the killed culture, the subcutaneous spine tissue temperature decreases as body temperature increases indicating an active reduction in heat emission from body surface. With the introduction of alpha-dinitrophenol, the skin temperature increases more rapidly and higher than body temperature, which helps increase the emission of excess heat. The capacity to realize a pyrogenic reaction appears during the early development of homoiothermy and its expression depends on the development of

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physical heat control mechanisms. Chemical heat control serves as the basis of homoiothermy formation and the energy basis of the pyrogenic reaction itself. In white rats the chemical component of pyrogenic reactivity is well developed, but the physical component which is affected by ecological factors is less developed and less markedly expressed. Orig. art. has: 3 figures.

ASSOCIATION: Laboratoriya sravnitel'noy fiziologii i patologii i Laboratoriya obshchey patologii Instituta eksperimental'noy meditsiny* AMN SSSR, Leningrad (Laboratory of Comparative Physiology and Pathology of the Experimental Medical Institute of the AMN SSSR, Leningrad)

SUBMITTED: 06May63 ENCL: 00 SUB CODE: LS

NR REF SOV: 005 OTHER: 009

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SHEVEIKIN, A.

Trining in night firing from self-propelled equipment. No 10.

Tankist, No 12, 1948.

SHEVELKIN, A.

PLECHINTSEV, S. & SHEVELKIN, A.

Preparatory training in firing at stationary targets from fixed positions. No 12.

Tankist, No 12, 1948.

SHEVELKIN, A.

From the tank's turret. Voen. znan. 25 no.1:10 Ja '49. (MIRA 12:12)

(Tanks (Military science))

SHEVELKIN, A.

Hitting the target from a tank. Voen.znan. 25 no.6:14-15 Je '59. (MIRA 12:12)
(Target practice)

SHEVELKIN, B. N.

GOLOVANOVA, A.P., inzhener; SHEVELKIN, B.N., kandidat tekhnicheskikh nauk.

Introducing stamping in chemical machinery manufacturing. Sbor.st. NIIKHIMMASH no.19:3-21 '56. (MIRA 10:3)
(Forging)

SHEVELKIN, B.N., kandidat tekhnicheskikh nauk; GOLOVANOVA, A.P., inzhener.

Pressure working of two-ply sheet steel. Sbor.st.NIIKHIMMASH no.19:47-67 '56. (MLRA 10:3)

(Sheet-metal work)

SHEVELKIN, B.N., kandidat tekhnicheskikh nauk; GOLOVANOVA, A.P., inzhener.

Stamping machine-parts from non-ferrous metals and alloys in closed dies. Vest. mash. 36 no.8:58-59 '56. (MLRA 9:10)

(Dies (Metalworking))

GOLOVANOVA, A.P., inzh.; SHKVELKIN, B.N., kand.tekhn.nauk

Designing and determining the basic dimensions of dies for stamping elliptical bottoms in chemical equipment. Trudy NIIKHIMMASH no.26:130-178 '58. (MIRA 13:7)
(Chemical engineering—Equipment and supplies)
(Dies(Metalworking))

SHEVELKIN, B.N., kand.tekhn.nauk; BOGOSLOVSKIY, I.M., inzh.

Study of forgeability of Kh23N23M3D3, N23N27M2T, and Kh23N28M3D3T steels. Trudy NIIKHIMMASH no.26:179-185 '58. (MIRA 13:7)
(Steel—Testing)

SHEVELKIN, B.N., kand.tekhn.nauk

Flaws in the spherical bottoms of units, made by hand from stainless and acid-resistant steel. Trudy NIIKHIMMASH no.26:186-191 '58. (MIRA 13:7)
(Chemical engineering--Equipment and supplies)

SHEVELKIN, B.N., kand.tekhn.nauk

Die-stamped and welded parts and prospects for their use in the chemical machinery manufacturing industry. Trudy NIIKHIMMASH no.26:192-206 '58. (MIRA 13:7)
(Chemical engineering--Equipment and supplies)

87573

S/184/59/000/006/004/006
A104/A026

18.8200 1045 1413 1454

AUTHORS: Shevelkin, B.N.; Candidate of Technical Sciences, Bogoslovskiy, I.M. and Kravchenko, L.L.; Engineers

TITLE: On the Choice of a Method for Pressure Processing of Two-Layer 20K-X 18H12M2T (20K-Kh18N12M2T) Steels

PERIODICAL: Khimicheskoye mashinostroyeniye, 1959, No. 6, pp. 40 - 42

TEXT: The article deals with new structural steels. The double-coated steel consisting of a carbon-steel primer with a 08X13 (08Kh13) and 1X18N9T (1Kh18N9T) acid-proof steel coating used in chemical and petroleum engineering shows inadequate corrosion resistance. For heavy boilers the use of double-coated steel with Kh18N12M2T steel plating is recommended. Tests on pressure processing of double-coated 20K-Kh18N12M2T 35-mm steel carried out by the Leningradskiy filial NIIKhIMMASh (Leningrad Branch of the All-Union Design and Scientific Research Institute of Chemical Machinery) are described. Plastic properties tested at temperatures of 20-1,180°C are highest at normal temperatures and at 1,100-1,180°C. The adhesive strength between the primer and the coating was determined by shearing and tearing tests on a 5-ton tensiometer at 20, 700, 800, 1,000, 1,100 and

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S/184/59/000/006/004/005
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On the Choice of a Method for Pressure Processing of Two-Layer 20K-X18H12M2T(20K-Kh18N12M2T) Steels

1,180°C. The influence of heating time on the adhesive strength between primer and coating was tested during 15, 30, 60 and 120 minutes heating time at 1,100°C and subsequent water cooling. The behavior of double-coated steel during bending and its influence on intercrystalline and general corrosion of the coating was tested under cold and hot conditions (1,000°C) on 35-mm cross-section samples. Bending was done by stamps with a radius curvature of 16, 24 and 40 mm. The improving properties of heat processing on strained metal was tested by annealing at 750 - 950°C for 3 hours followed by air cooling (for austenitic steel alloys). Metallographic tests revealed no damage to the adhesion of 20K (20K) and Kh18N12M2T double-coated steel during bending, despite of the separation of a carbide layer of 0.03 - 0.1 mm at the contact line of the primary layer and the coating. Doublecoated steel can be strained either hot or cold for stamping purposes; stamping itself should be performed at 1,180 - 900°C. As the shearing and tearing strength decreases during prolonged heating prior to stamping, this should be curtailed as much as possible. The permissible bending radius in hot or cold conditions is: 3 - 3.5 a (cold) for outward bending (T = 1,200 - 400°C) and 4 - 2.5 a for inward bending.

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Moscow. Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo mashinostroyeniya.

Materialy v khimicheskom mashinostroyenii (Materials in Chemical Machine Building) Moscow, Informatsionno-izdatel'skiy otdel, 1960. 143 p. (Series: Its: Trudy, vyp. 34) 3,000 copies printed.

Sponsoring Agency: Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu and Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo mashinostroyeniya NIIKhIMMASh.

Ed. (Title page): V. K. Fedorov, Candidate of Technical Sciences; Editorial Council: Chairman: V. B. Nikolayev; Deputy Chairman: Yu. M. Vinogradov, Candidate of Technical Sciences; B. N. Borisoglebskiy, A. N. Goncharov, Yu. G. Popandopulo, I. N. Yokalov, Candidate of Technical Sciences, and G. M. Yusova, Candidate of Technical Sciences; Ed.: V. I. Glukhov; Tech. Ed.: P. A. Vshivtsev.

PURPOSE : This collection of articles is intended for technical personnel in chemical machine building and other branches of the machine and instrument industry.

COVERAGE: The collection deals with the results of investigations on the mechanical, corrosive, and engineering qualities of certain alloys. Also discussed are heat-treatment regimes, the phase composition of stainless steels, methods of checking products, and new designs of apparatus used in checking. References accompany each article.

TABLE OF CONTENTS:

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Shevelkin, B.N.

82111
S/184/60/000/02/03/006

1P.5200
25.1000

AUTHOR: Shevelkin, B.N., Candidate of Technical Sciences

TITLE: Pressing of Two-Layer Sheet Material

PERIODICAL: Khimicheskoye mashinostroyeniye, 1960, No 2, pp 33 - 36

TEXT: To reduce the consumption of "1X18H9T" (1Kh18N9T), "X18H12M2T" (Kh18N12M2T), "X18H12M3T" (Kh18N12M3T) and other high-alloy acidproof steels (containing up to 28% nickel) as well as various nonferrous metals, two-layer sheet steel and bi-metal are used for building corrosion-proof equipment. The Soviet metallurgical industry has started the production of two-layer sheet steel "CT 3-1X18H9T" (St 3-1Kh18N9T), "CT 10-1X18H9T" (St 10-1Kh18N9T), "CT 20K-X18H12M2T" (St 20K-Kh18N12M2T) in thickness of 8 - 60 mm (ChMTU TsNIIChM 211-59). Sheets, depending on their thickness are up to 1,800 mm wide and up to 7,000 mm long. The guaranteed resistance to shearing between layers is 15 kg/mm^2. The production of bimetal sheets has also been started: St. 10-silver; St. 3-aluminum; steel-copper; steel-brass; steel-bronze. The production of titanium-plated bimetal will be necessary. When pressing two-

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in both cold and heated state. In a cold state, St. 3-1Kh18N9T, 8 mm thick, has tensile and shearing strengths of 56 - 63 kg/mm^2 and 28 - 32 kg/mm^2, respectively. Two-layer sheets must be cut with the plating on top, thus burrs are formed on the basic metal. When cutting sheets plated on both sides with different materials, the side with a lower hardness must be on top. The same rules apply to punching. Oxygen-flux or oxyacetylene torch cutting can be also used. Two-layer sheet steel and bimetal can be shaped on presses and rollers in cold and heated state. However, cracks can appear in the transition zone, due to a lowered plasticity. Bending radii were compiled in Table 2. Drawing of subject materials can be performed in cold and heated state. For cold pressing of bottoms from blanks of a small thickness ($D_{blank} / d_{bottom} > 160$) a die with a telescopic clamping ring developed by NIIKhIMMASh, can be recommended. For pressing, platings must be protected by sheets of thin paper or a soft metal (aluminum).

There are: 2 photographs, 1 diagram, 1 set of graphs, 2 tables and 4 references: 2 Soviet, 1 American and 1 German.

S/184/60/000/005/004/021
A104/A026

18.7400

AUTHORS: Shevelkin, B.N., Candidate of Technical Sciences; Kravchenko, L.L.; Bogoslovskiy, I.M.; - Engineers

TITLE: Investigation of the Processability of Laminated Steel-Silver Sheets

PERIODICAL: Khimicheskoye mashinostroyeniye, 1960, No. 5, pp. 37 - 39

TEXT: A new type of silver coated steel was developed by the Giprotsvetmetobrabotka (State Designing, Planning and Scientific Research Institute for Processing Nonferrous Metals). The sheets consist of a "steel 10" basic layer coated with 99.98% silver. Firm adhesion between the base metal and the coating is ensured by a special-alloy interlayer, vacuum heated prior to hot rolling. Tests were performed in the NIIKhIMMASh (All-Union Designing and Scientific Research Institute of Chemical Machinery). Figure 1 shows the structure of the base metal (1), interlayer alloy (2) and the silver coating (3).

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S/184/60/000/005/004/021
A104/A026

Investigation of the Processability of Laminated Steel-Silver Sheets

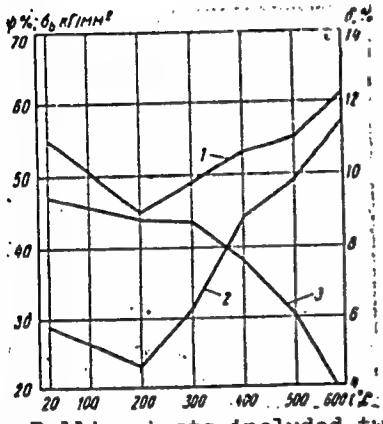

Figure 2 shows the effects of heating at 20 - 600°C, i.e., relative contraction (ψ); relative elongation (δ) and tensile strength (σ_b). Buckling tests were performed at 20 - 700°C. Elongation properties were tested on solid or welded ingots, which were cold forged into 400 and 700 mm diameter bottoms with inverted plating. Only the carbon-steel layer was welded before forging with 942A (ECh2A) electrodes, the coating was applied afterwards. To avoid damage of coatings during forging the ingot was protected with parchment paper. The porosity of ingot and bottom coating was examined by application of filter paper soaked in a solution of 10 g NaCl, 10 g gelatine and 1 g $K_3Fe(CN)_6$ in 1 l of water. No porosity was found. Rolling tests included two 400 and 700 mm shells. Coating damages were avoided by interlayers of thin aluminum foils or strong paper. After rolling the coating was inspected as to porosity according to the described method. The authors' conclusion is: silver coated steel sheet of 5 mm or less showed satisfactory

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Investigation of the Processability of Laminated Steel-Silver Sheets

tensile strength and elasticity when subjected to buckling, elongation and rolling in cold state. Bottoms should be made from solid ingots or heat-processed welded ingots. Protective interlinings of parchment paper are necessary during pressure processing of silver-coated steel for stampings and thin aluminum foils and of strong paper for rolling. High surface cleanness of stamps and rollers are essential. Silver-coated steel is not suitable for cold or hot manual stamping. Porosity checks are indicated, any defects can be removed by dressing or welding. Thickness of welding should be checked with calipers, and the adhesion between base metal and coating by the electroacoustic method. There are 3 figures and 1 table.

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S/184/61/000/001/007/014
A104/A029

AUTHORS: Shevelkin, B.N., Candidate of Technical Sciences, Kravchenko, L.L., Golovanova, A.P., Engineers

TITLE: Investigation Into the Processibility of High-Chromium X25T (Kh25T) Steels by Pressure

PERIODICAL: Khimicheskoye Mashinostroyeniye, 1961, No. 1, pp. 37-40

TEXT: The necessity for nickel economy is stressed, followed by the description of the results of tests carried out by the NIIKhIMMASh on the processibility of high-chromium Kh25T steels by pressure. Changes of the mechanical properties of Kh25T steel during tests at 20-1,100°C are shown in Fig. 1. During cooling from 0 to -70°C a marked decrease of resilience accompanied by slight improvement of tensile strength was observed. Elongation tests at temperatures below zero were carried out in a thermostat installed in a breaking machine. Cooling was achieved by sublimation of solid carbon dioxide in ethyl alcohol. After elongation, bending, etc. the processed samples were heated in order to diminish the deformation force. The samples were subjected to repeated heating at temperatures of

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Investigation Into the Processibility of High-Chromium X25T (Kh25T) Steels by Pressure

1,000 - 1,180°C for varying lengths of time. Simultaneously the effect of subsequent thermal treatment on their mechanical properties was tested at 760-780°C, followed by rapid water cooling. A number of samples subjected to single or repeated heating up to 1,180°C of various duration and cooling rates were tested for tendency to intercrystallite corrosion under the supervision of I.G. Volikova. Tests were carried out in a copper sulfate solution (120 hours), 65% boiling nitric acid (96 hours) and 55% phosphoric acid (480 hours) at 70-80°C. Bending tests were performed on samples cut lengthwise and across rolled sheets at 100 - 1,180°C; the samples were then subjected to corrosion tests according to the above method plus soaking (2 x 48 hours) in 97% boiling acetic acid. The actual degree of deformations was determined by marking circles of 30 mm in diameter on slabs before pressing and measuring the ovals formed from these circles after pressing. Hardness and expansion tests of various sections of the bottoms revealed that hardness, deformation, tensile strength and

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A104/A029

Investigation Into the Processibility of High Chromium X25T (Kh25T) Steels by Pressure

yield limit increase towards the edges. The following recommendations were made: expansion and bending of Kh25T steel can be performed without heating (at $t \geq 15^{\circ}C$) or with heating to 900-700°C. The heating time must not exceed 20 min. Under these conditions the fine-grained structure is preserved and satisfactory plastic properties are achieved. The bending radius should not be less than 2.5 of the metal thickness (cold) or 1.5 (heated). Parts subjected to bending and expansion under hot condition should be heat-treated at 760-780°C for 2-3 min per mm, followed by rapid water cooling. Kh25T steels showed no tendency to intercrystallite corrosion after being pressure treated either cold or heated to 900-700°C for 20 min. The high corrosion resistance of Kh25T steels in 55% phosphoric acid and 97% boiling acetic acid was established. After deformation processing (either cold or at temperatures not exceeding 900°C) Kh25T steels showed high corrosion resistance and did not tend to intercrystallite corrosion in 65% nitric acid. Heated to above 900°C, the steel reveals a tendency to

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Investigation Into the Processibility of High Chromium Х25Т (Kh25T) Steels by Pressure

intercrystallite corrosion accompanied by rapid reduction of corrosion resistance. There are 6 figures.

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S/184/61/000/001/007/014
A104/A029

Investigation Into the Processibility of High Chromium X25T (Kh25T) Steels by Pressure

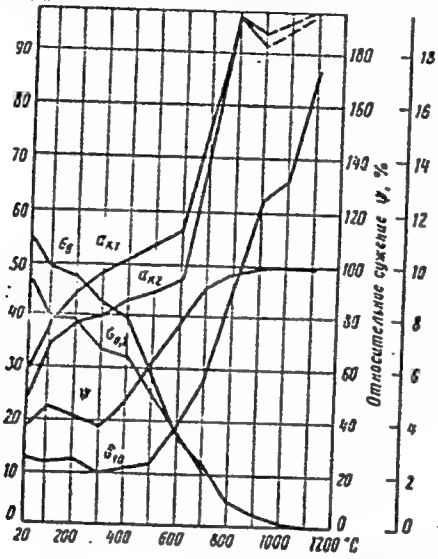

Fig. 1: Changes of the mechanical properties of Kh25T steels during tests at 20 - 1,100°C.
a_{k1} = samples cut lengthwise;
a_{k2} = across rolled sheet;
dashes = unfractured samples

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A104/A029

Investigation Into the Processibility of High Chromium X25T (Kh25T) Steels by Pressure

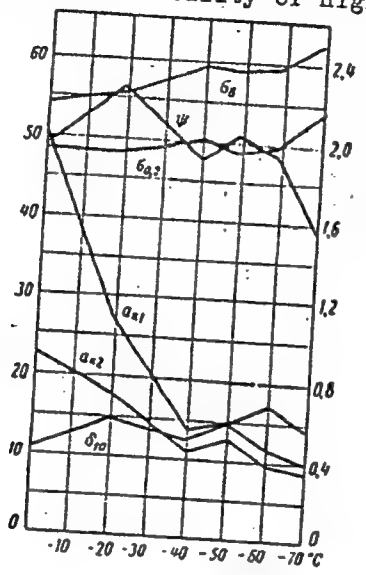

Fig. 2. Changes of the resilient force of Kh25T steel. 1. = after heating and air cooling; 2. = after heating and air cooling followed by thermal treatment and water hardening at 760-780°C

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21925

1-1200
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S/184/61/000/003/003/004
D041/D113

AUTHOR: Shevelkin, B.N., Candidate of Technical Sciences, Kravchenko, L.L., Golovanova, A.P., Bogoslovskiy, I.M., Engineers

TITLE: Investigations concerning the possibility of working titanium alloys by means of pressure

PERIODICAL: Khimicheskoye mashinostroyeniye, no. 3, 1961, 33-38

TEXT: The article contains some data of the above-mentioned investigations carried out at NIIKhIMMASh to be used in the manufacture of parts for devices of the chemical machine building industry. The investigations have been carried out on BT1 (VT1) alloy sheets, 1.5 to 8 mm in thickness and on OT 4 (OT 4) sheets 1.5 and 5 mm in thickness. Fig.1 shows that the stability (σ_B and $\sigma_{0.2}$) of the alloys decreases without variation when heated up from 20 to 700°. A maximum decrease in a temperature range of 20-400° has been observed with samples which had been cut out transversely to the rolling direction. Impact toughness variation of VT1 (6 mm thickness) and OT4 (5 mm thickness) in a temperature range of - 70 to + 1000° is shown in Fig.2. At temperatures close to 1000°, impact toughness values could not be obtained since

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the samples only buckled due to high plasticity; in Fig.2, this is shown by a dotted line. On investigating the mechanical properties of the VT1 titanium sheets (12 and 25 mm thick) there was no indication of anisotropy of the mechanical properties along the length and breadth of the rolling direction. The mechanical and plastic properties of the alloys were tested under various heat conditions. VT1 samples were heated in the furnace (from one to three times) up to 750°, OT4 samples up to 800° and cooled in the air; the soaking time was changed from 20 to 160 minutes, and the samples were cooled in different media (water, air and together with the furnace). The tests have shown that triple heating with 160 minutes' soaking at temperatures below allotropic conversions deteriorates only by 5-10% the plastic properties of both alloys. A corrosion test in a 1.5% H_2SO_4 solution indicated that a heating of up to 800° with short soaking (up to 30 minutes) does not change the corrosion resistance of the metal. Prolonged soaking at temperatures of 750° deteriorates the latter property. Table 3 shows the permissible bending radii obtained from investigations with cold and hot samples. After the bending tests, corrosion tests were carried out during 100 hours under the guidance of G.L. Shvarts . The technological media contained molybdenum trisulfide, molybdenum and tungsten sulfo-

Investigations concerning the possibility .....

salts, as well as hydrochloric acid and sulfide compounds. The corrosion speed of VT1 did not exceed 0.015 G/m^{2}hour, and of the OT4 0.06 G/m^{2}hour. Shells rolled out from titanium sheet with a lengthwise welding seam can be flanged with a local heating up to 300-350°, and in case the whole shell is hot, with a general heating up to 550-750°. The largest flange diameter is determined by the following formula:

$$D_{max} = d_{mean}(\ldots) \text{ Coef flanging}$$

The symbols are explained in Fig. 6a. Drawing tests with titanium alloys have been carried out in die-sets by means of a 30 ton hydraulic press. As punch material C435-52 (SCh 35-52) chromium-nickel cast iron is recommended; the dies should be made of the same cast iron with steel inserts or of steel whose surface has been consolidated to a hardness of RC 56-60. The working surface of the punches and dies must have a fineness of ▽ 9, and if higher accuracy is required, the surfaces must be polished. Bottom stamping from titanium alloys was also effected. The following conclusions were drawn: 1. Bottom stamping from VT1 with a relative elongation of more than 20% can be effected in the cold state; if the press has not the necessary capacity, the punches and blank should be heated to temperatures of

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Investigations concerning the possibility .....

300-350° or the blank should be heated to 550-750°. Bottom stamping from VT1 with a relative elongation of less than 20% in the cold state is not recommended. Bottom stamping from OT4 alloy should be carried out by heating the die-set and the blank to temperatures of 300-350° or by using a hot piece with temperatures of 650-850°. 2. Die-sets for stamping elliptical bottoms should have a curvature radius of (2-3) δ, and a clearance (unilateral) between die and punch of $z = (1.05 \div 1.11)\delta$. 3. Cold stamping requires XBЛ-21 (KhVL-21) or 9-32 lacquers as lubricants for covering the blanks, as well as water-colloidal preparations like B-0 (V-0) or B-1 (V-1). For hot stamping it is recommended to use V-0, and V-1 or dry graphite to be sprayed on the surface. 4. The blank's edges should be evenly cut and the burr removed. 5. In order to increase the plasticity and remove the remaining inner strains, a heating to 550-600° with a soaking of 3-4 minutes per every mm of the bottom-wall thickness must be effected. 6. Corrugations and bulges can be removed by secondary stamping or by heating them up to 400-500° and hammering with a copper hammer on the die. Flanging, expanding, flattening, bending and rolling tests with cold VT1 pipes (diameter - 26 mm, wall thickness - 1.5 mm) have been carried out. The VT1 had a stability limit of 46.6 kG/mm^2 and a relative elongation of 21.5%. The tests

21925

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D041/D113

Investigations concerning the possibility .....

gave satisfactory results. 26 x 1.5 mm pipes in a framework with apertures of 26.4, 26.6, and 26.8 mm have undergone rolling tests: no defects appeared on the surface and the expansion degree was 0.7-1.5% which corresponds to the HMX-105-56 (NMKh-105-56) standard. Technological tests with 25 x 1.2 and 38 x 3 mm VT1 pipes gave bad results. The pipes disintegrated along the welding seam. There are 7 figures and 6 tables.

X

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1.1200
1.2300

27043
S/182/61/000/004/005/007
D038/D112

AUTHOR: Shevelkin, B.N.

TITLE: Stamping bottoms (shallow cups) from pile-welded blanks for apparatus

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, no. 4, 1961, 42-43

TEXT: The article describes a process which eliminates bulges and puckers in stamped bottoms (shallow cups) which, up till now, had sometimes to be manufactured with walls 30-50% thicker than planned, causing waste of metal and increasing the weight of the apparatus. [Abstracter's note: type of apparatus not specified]. The process developed by the laboratoriya obrabotki davleniyem (Laboratory of Working by Pressure) at NIIKhIMMASh, was tested at the opytnyy zavod NIIKhIMMASh (NIIKhIMMASh Experimental Plant) where pile welded blanks with a bottom thickness ratio of $\frac{D \text{ (blank diameter)}}{S \text{ (blank thickness)}} = 800 \div 1000$ and sometimes higher were stamped. The pile-welded blank (Fig. 1) comprises three separate disc-shaped blanks, i.e. two outer carbon steel blanks and a central one made from acid-proof and stainless steel, non-ferrous metals, titanium and other rare metals. To allow air to escape

Card 1/4

Stamping bottoms ....

from the pile-welded blank, 6-10 mm diam apertures were made in the carbon steel blank along the circumference whose diam equals $\frac{D_{(blank)}}{2}$, or at a distance of 10-20 mm from the blank edge, depending on the depth of the seam. Before welding, the blanks must be either straightened and pressed together or placed in a welding device (Fig. 2), and the edges of the carbon steel blanks dressed. The blank diameter must be 15-25 mm more than the standard diameter, depending on the depth of the weld, and the diameter of the titanium blank 10-15 mm less, in order not to interfere with the welding of the carbon-steel blanks. Blanks can be stamped in cold or hot state. Stainless or acid-proof steel central blanks must not be heated above 1100°C, and stamping must be completed not below 750-800°C, depending on the grade of steel. The BT 1-1 (VT1-1) titanium central blanks must not be heated above 700-750°C. The stamping must be completed at 500-550°C. To ensure proper stamping stability the thicknesses S_1 and S_3 of the outer blanks should be taken so that the ratios $\frac{Diam_{(blank)}}{S_{1(outer\ blank)}}$ and $\frac{Diam_{(blank)}}{S_{3(outer\ blank)}}$ should not be more than 160.

Ordinary dies with a clamp can be used, and the gap between the die and the counter die should equal 0.1 of the thickness of the carbon steel blank, to avoid puckers and folds. After stamping, the bottoms (shallow cups) are undercut and separated.

Card 2/4

27043
S/182/61/000/004/005/007
D038/D112

Stamping bottoms ....

The described process was successfully introduced at a plant producing apparatus, where bottoms of different diameters and different materials were manufactured. The following staff members of the NIIKhIMMASh Laboratory of Working by Pressure took part: Senior Engineer A.P. Golovanova and Senior Technician Ye.I. Maslov. There are 3 figures.

Card 3/4

S/184/62/000/005/002/003
D040/D113

AUTHORS: Shevelkin, B.N., Candidate of Technical Sciences; Kravchenko, L.L. and Golovanova, A.P., Engineers

TITLE: Pressability of Khl7T and Khl7N2 high-chromium steels

PERIODICAL: Khimicheskoye mashinostroyeniye, no. 5, 1962, 28-32

TEXT: The behavior of X17T (Khl7T) and X17H2 (Khl7N2) Cr steels belonging to a class containing 17-25% Cr has been studied at NIIKhIMMASh in bending and extrusion, and in corrosive media after such working. The experiments were conducted so as to find substitutes for scarce acidproof Ni-Cr steel grades used in the chemical industry. Changes in the mechanical properties and corrosion resistance of bent and extruded specimens were studied at various temperatures (-70 to + 1180°C) and in boiling acids. Both steels proved applicable under certain conditions: (1) Bending with slight strain is possible at above 15°C, while more complex shaping with more strain is possible only when heating is applied. The proper heating ranges for Khl7T and Khl7N2 steels are 1000-750°C and 1150-950°C respectively. (2) Heat treatment is needed after hot extrusion;

Card 1/2

Pressability of Khl7T and .....

for Khl7T the proper treatment is heating to 760-780°C, holding for 3-4 min per 1 mm thickness and cooling in air; Khl7N2 has to be quenched at 1100°C, held for 3-4 min per 1 mm thickness, cooled in oil, tempered at 680°C, held for 3-4 min per 1 mm thickness, and finally cooled in air; intercrystalline corrosion appearing in Khl7N2 after heating over 900°C can be eliminated by heating to 680°C, holding for 15-20 min per 1 mm thickness, and then cooling in air. The bending radii in cold bending should not be less than three thicknesses of metal for Khl7T, and five thicknesses for Khl7N2. In hot bending, the minimum radii should be two thicknesses of metal irrespective of the type of steel. There are 5 figures and 1 table.

Card 2/2

S/137/63/000/003/014/016
A006/A101

AUTHOR: Shevelkin, B. N.

TITLE: The effect of different α-phase content in 1 X18 H9 T (1Kh18N9T) steel and of α- and σ-phases in X18 H12M 3 T (Kh18N12M3T) steel upon pressure working ability

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1963, 69, abstract 31374 ("Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr.", 1960, no.34, 82 - 103)

TEXT: The author studied the effect of α- and σ-phases and of different heating and cooling conditions of 1Kh18N9T and Kh18N12M3T steel upon pressure working ability, mechanical properties, general corrosion resistance and proneness to intercrystalline corrosion. It was established that a higher content of the α-phase, risen from 0 to 10%, increases the strength and does not reduce the ductility of the steel at room temperature and in a 700 - 800°C range; α and σ phases do not affect the mechanical properties of the steel after repeated heating (up to 5) within the forging temperature range (1,150 - 1,180°C), and after

The effect of different...

cooling in different media. Under heating and cooling conditions used in hot machining, an increase of the α-phase up to 10% in 1Kh18N9T steel does not cause proneness to intercrystalline corrosion. α- and σ-phases (5 - 10%) in Kh18N12M3T steel increase the danger of arising intercrystalline corrosion after pressure working. Repeated heating to 1,150 - 1,180°C increase sharply the corrosion rate of 1Kh18N9T steel with α-phase and of Kh18N12M3T steel with α and σ-phases. Extended heating time increases the corrosion rate of these steel with α- and σ-phases. 1Kh18N9T and Kh18N12M3T steels, containing α- and σ-phases should be heat-treated after cold and hot bending operations. Bottoms can be punched out in cold and hot state out of 1Kh18N9T steel with α-phase to 10% and of Kh18N12M3T steel with α-phase to 5%. Kh18N12M3T steel with 10% σ-phase is not recommended for the punching of bottoms. Cold bending and punching of 1Kh18N9T steel with α-phase up to 10% and Kh18N12M3T steel with α-phase up to 5% do not cause proneness to intercrystalline corrosion.

N. Kalinkina

[Abstracter's note: Complete translation]

Card 2/2

AM4020394 BOOK EXPLOITATION S/0783

Galitskiy, B. A.; Abelev, M. M.; Kolosova, L. P.; Toropov, V. A.; Shevelkin, B. N.

Titanium and its alloys in the chemical engineering industry (Titan i ego splavy* v khimicheskom mashinostroyenii) Moscow, Mashgiz, 1963. 263 p. illus., biblio. 2500 copies printed. Reviewer: Dombe, Yu. I.; Editor: Skvortsov, Ye. Ye. (Engineer); Deputy editor: Ry*bakova, V. I. (Engineer); Editor of the publishing house: Tairova, A. L.; Technical editors: El'kind, V. D.; Makarova, L. A.; Proofreader: Piryazev, P. A.

TOPIC TAGS: Titanium, titanium alloy , chemical engineering, machining of titanium, forming of titanium, welding of titanium

PURPOSE AND COVERAGE: This book was written for engineers and technicians at industrial establishments, design bureaus, and scientific-research institutes connected with the chemical engineering industry, as well as for engineers and technicians in industrial establishments utilizing chemical apparatus and equipment. It may be of use also as a study aid for students in machine-design vuzes and technicums. The construction of chemical equipment made of titanium is

Card 1/2

AM4020394

analyzed, and the special characteristics of the machining, forming, and welding of titanium and its low alloys utilized in the chemical engineering industry are outlined.

TABLE OF CONTENTS:

SUB CODE: MM, GC SUBMITTED: 30Sep63 NR REF SOV: 043

OTHER: 016

Card 2/2

SHEVELKIN, B.N., kand.tekhn.nauk

Use of titanium in the chemical machinery manufacture in Japan.
Khim.mashinostr. no.4:38-41 Jl-Ag '63. (MIRA 16:9)
(Japan--Chemical engineering--Equipment and supplies) (Titanium)

L 10711-63 EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD

ACCESSION NR: AP3001650 S/0063/63/008/003/0317/0328 54

AUTHOR: Shvarts, G. L. (Candidate of technical sciences); Shevelkin, B. N. (Candidate of technical sciences); Toropov, V. A. (Candidate of technical sciences)

TITLE: Titanium: a new material for chemical equipment

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 8, no. 3, 1963, 317-328

TOPIC TAGS: titanium, corrosion-resistance, chemical equipment

ABSTRACT: Authors present a detailed description of titanium and its application as one of the materials used for chemical equipment. The article contains descriptions of titanium and its chemical compositions, its mechanical and physical properties being manufactured in the SSSR and abroad and its best application as chemical equipment in different branches of the chemical industry. Titanium and its alloys at normal temperatures possess sufficient strength but are slightly less plastic than corrosion-resistant steels. The plasticity of titanium depends on the amount of the admixtures and alloying elements, the increase of which increases the strength and lowers the plastic properties of titanium. The most widely used

Card 1/2

L 10711-63
ACCESSION NR: AP3001650

titanium in the SSSR for chemical machine construction is the commercially pure titanium VT1, titanium alloy OT4-1 and OT4. Despite the high engineering properties and corrosion resistance of titanium and prospects of application in the construction of chemical equipment, the practical application is limited because of its high price. The only possible application at a lower cost of high-corrosion resistant chemical equipment is titanium (coated) steel. Orig. art. has: 6 figures and 8 tables.

ASSOCIATION: none

SUBMITTED: 000	DATE ACQ: 01Jul63	ENCL: 00
SUB CODE: 00	NO REF SOV: 007	OTHER: 012

bm/CR
Card 2/2

BR

ACCESSION NR: AR4027679 S/0276/64/000/001/V022/V022

SOURCE: RZh. Tekhnologiya mashinostroyeniya, Abs. 1V123

AUTHOR: Shevelkin, B. N.

TITLE: Stamping of elliptical bottoms for apparatus from welded pack blanks

CITED SOURCE: Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr., vy*p 43, 1963, 66-69

TOPIC TAGS: elliptical stamping, stamping, welded pack blank, welded stamping blank

TRANSLATION: The author describes the technology involved in the hot extrusion of thin-walled elliptical bottoms from Kh18N9T stainless steel, Ti and other materials with a ratio of the blank diameter to wall thickness on the order of 800-1000. To obtain high-quality bottoms (without corrugations, buckling, and folds), a composite blank is used. The blank consists of three discs, with a stainless steel disc sandwiched in the middle; the upper and lower discs are of St3 steel. The disc edges are welded; the heating temperature in the middle

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ACCESSION NR: AR4027679

steel disc is 1100°, and in the ti disc -- 650-700°C. 3 illustrations. I. Gendlina.

DATE ACQ: 03Mar64 SUB CODE: ML ENCL: 00

Card 2/2

ACCESSION NR: AR4027677 S/0276/64/000/001/V003/V003

SOURCE: RZh. Tekhnologiya mashinostroyeniya, Abs. 1V4

AUTHOR: Shevelkin, B. N.; Kravchenko, L. L.

TITLE: A study of the pressure treatment of tantalum and niobium

CITED SOURCE: Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr., vy*p. 43, 1963, 54-65

TOPIC TAGS: tantalum, niobium, tantalum pressure treatment, niobium pressure treatment

TRANSLATION: The authors give data on changes in the mechanical properties of Ta and Nb upon heating from 20 to 300° and cooling from 0 to -70°, as well as technological properties upon bending, roll forming, extrusing, (tube) expanding, and pipe flanging. On the basis of the results of studies the authors suggest minimum bending radii for Ta and Nb, as well as temperature regimes for their treatment. 6 illustrations. I. Gendlina.

DATE ACQ: 03Mar64 SUB CODE: ML ENCL: 00

Card 1/1

L 41332-65 EWT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(b) Pad LJP(c) MJW/
JD/HW/JG/WB

ACCESSION NR: AR5000732 S/0277/64/000/009/0007/0007 32 B

SOURCE: Ref. zh. Mashinostroitel'ny*ye materialy*, konstruktsii i raschet detaley mashin. Gidroprivod. Otd. vy*p., Abs. 9.48.40

AUTHOR: Istrina, Z. F.; Krutnikov, A. N.; Shevelkin, B. N.; Shapiro, M. B.; Akshentseva, A. P.; Khimushin, F. F.; Frolikova, Ye. M.; Belinkiy, A. L.

TITLE: Corrosion resistant properties of chromium nickel steels with lowered nickel content

CITED SOURCE: Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr., vy*p. 45, 1963, 76-93

TOPIC TAGS: corrosion resistance, chromium nickel steel, nickel containing alloy, metal corrosion, steel OKh21N5T, steel OKh21N6M2T, steel OKh17N5G9AB, steel 1Kh18N9T, steel 1Kh18N12M2T

TRANSLATION: Results of an investigation of the structure, heat treatment, weldability, pressure working, and corrosion resistance of corrosion resistant steels with reduced nickel content and their

Card 1/2

L 41332-65
ACCESSION NR: AR5000732

welded joints are presented, and the field of application of these steels in the construction of chemical equipment is determined. Because of their corrosion resistance, steels 0Kh21N5T, 0Kh21N6M2T, and 0Kh17N5G9AB can be used as substitutes for steels 1Kh18N9T and 1Kh18N12M2T in a variety of corrosive media, for example, in the production of caprolactam, adipic acid, dimethylterephthalate, citric acid, urea, nitric acid, and others.

SUB CODE: MM ENCL: 00

Card 2/2

L 57059-65 EPA(s)-2/EWT(m)/EPF(c)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4/Pad IJP(c) MJW/JD/HW/WB/HM

ACCESSION NR: AR5008973 S/0137/65/000/001/I070/I070

669.15.018.85

SOURCE: Ref. zh. Metallurgiya, Abs. 1I463

AUTHOR: Istrina, Z. F.; Krutikov, A. N.; Shevelkin, B. M.; Shapiro, M. B.; Akshentseva, A. P.; Khimushin, F. F.; Frolikova, Ye. M.; Belinkiy, A. L.

TITLE: Properties of corrosion-resistant nickel-chrome steel with reduced nickel content

CITED SOURCE: Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr., vyp. 45, 1963, 76-93

TOPIC TAGS: metallurgy, ferrous metals, corrosion resistance, heat treatment, welding

TRANSLATION: Austenite-ferrite OKh21N5T, PKh21N5T and OKh21N6M2T steels and OKh17N5G9AB of the austenite class were studied. The OKh21N5T and OKh21N6M2T steels were quenched from 1000°, OKh17N5G9AB from 1150°. Additional toughening of steels of the austenite-ferrite class can be achieved by age-hardening at 475° for

Card 1/2 *[PKh21N5T should be 1Kh21N5T]

L 57059-65

ACCESSION NR: AR5008973

3

2 hours. The σ_s of OKh21N6M2T steel is increased from 45 to 51 kg/mm^2 and that of OKh21N5T steel to 50 kg/mm^2 by heat treatment, which produces martensite conversion. Conditions of heat treatment in this case are: heating to 750°; cold working at -70° for two hours and age-hardening at 350° for two hours. The welding conditions for the steels studied correspond to the parameters for steels of type 18-8 and 18-12. Heat treatment of OKh21N5T and OKh21N6M2T steels should be done at 1080--800°; for OKh17N17M5G9AB steel at 1080-900°. OKh21N5T and OKh21N6M2T steels have high corrosion resistance and do not have a tendency toward intercrystalline corrosion after quenching from 1000°, and the same is true of OKh17N5G9AB steel for quenching from 1150°. Seams welded with an austenite electrode are resistant to intercrystalline corrosion.

SUB CODE: MM, IE ENCL: 00

dm

Card 2/2

TOROPOV, V.A., kand.tekhn.nauk; SHEVELKIN, B.N., kand.tekhn.nauk; SAMOCHATOV, I.M., inzh.; GERASIMENKO, G.I., inzh.

Technology of the manufacture of welded apparatus lined with thin-sheet, corrosion-resistant steel. Svar.proizv. no.2:26-27 F '64. (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo mashinostroyeniya.

L 7009-65 EWT(m)/EPF(n)-2/EWP(k)/EWP(q)/EWP(b) Pf-4/Pu-4 ASD(f)/
ASD(m)-3 JD/HW/JG/WB

ACCESSION NR: AP4045199 S/0314/64/000/001/0025/0027

B

AUTHOR: Shevelkin, B. N. (Candidate of technical sciences); Kravchenko, L. L. (Engineer)

TITLE: Investigation of pressure working of tantalum and niobium

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 1, 1964, 25-27

TOPIC TAGS: tantalum, niobium, tantalum sheet cold forming, niobium sheet cold forming, tantalum stamping, niobium stamping, tantalum flanging, niobium flanging, optimum heat treatment

ABSTRACT: Pressure working of 99.3%-pure tantalum and 98.9%-pure cast and rolled niobium sheets, 1 mm thick, has been investigated. In preliminary tensile tests at 20, 100, 200, and 300C and particularly in cold bending tests, both tantalum and niobium in the initial condition exhibited a sharp anisotropy which, however, was greatly reduced, and in the case of cast niobium completely eliminated, by annealing at 1450—1500C for one hour in a vacuum of 0.002 mm Hg or at 1200C for one hour in a vacuum of 0.00005 mm Hg. The heat treatment also sharply

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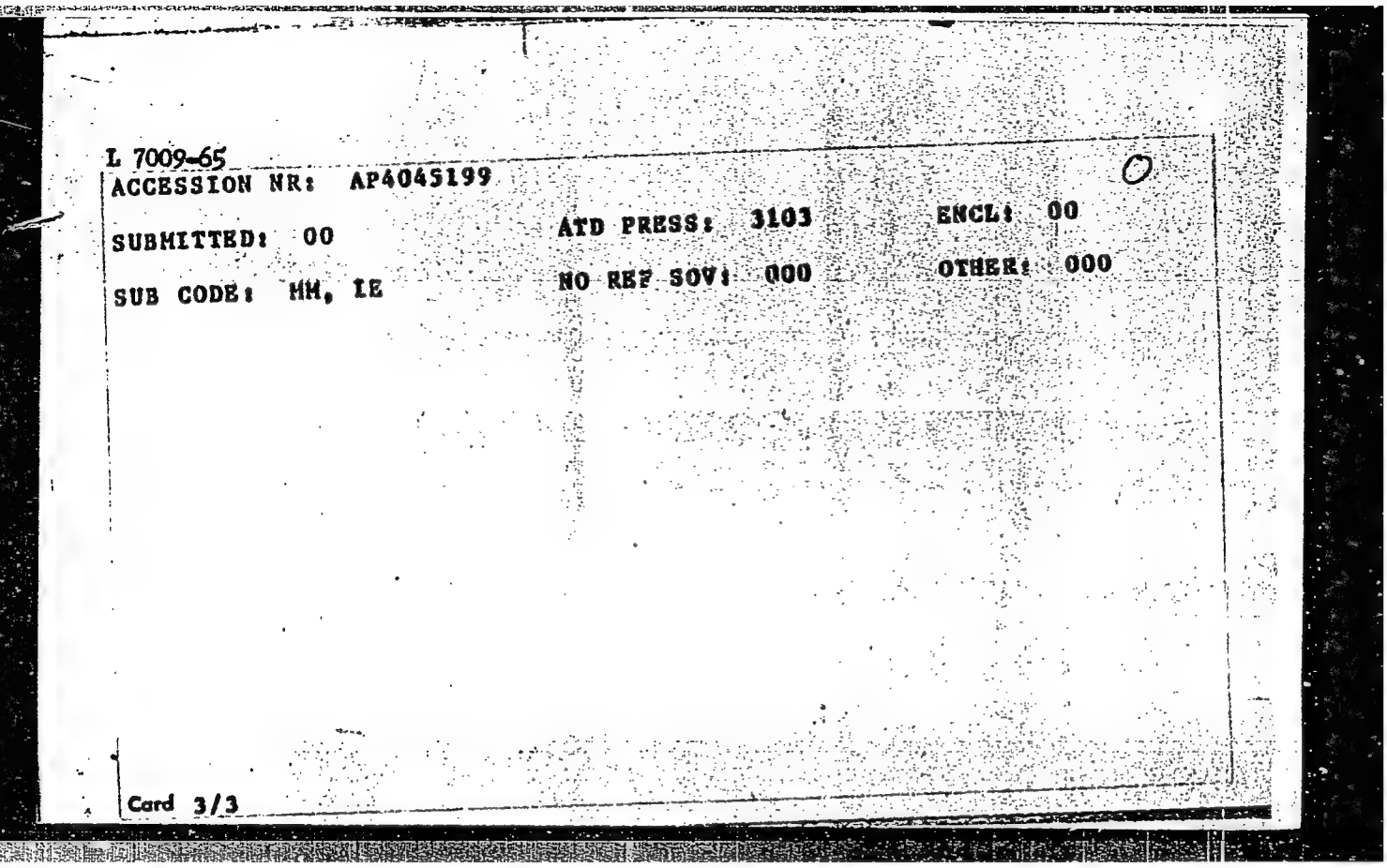
L 7009-65
ACCESSION NR: AP4045199

3

improved the ductility and decreased the strength of both metals. The anisotropy of the mechanical properties and its elimination by the heat treatment described above was also observed in the cold roll forming of shells 25 and 30 mm in diameter and 90 and 25 mm long. Shallow covers, 50 and 125 mm in diameter, have been successfully cold stamped from untreated tantalum and cast niobium using graphite lubricants. But stamping covers from HIC-welded blanks of tantalum and cast or sintered niobium was unsuccessful without preliminary heat treatment of the blanks. Preliminary heat treatment was also necessary for tube expanding and flanging. Annealing at 1200C for one hour in a vacuum of 0.00004 mm Hg permitted the expansion of tantalum tubes by 2.3—3.1%, of cast niobium tubes by 1.95—2.3%, and of sintered niobium tubes by 1.17—1.56%. The corresponding figures for cold flanging were 60, 36, and 32%. Corrosion resistance of all pressure-worked specimens was not affected by the sustained plastic deformation. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: none

Card 2/3



L 7009-65

ACCESSION NR: AP4045199

SUBMITTED: 00 ATD PRESS: 3103 ENCL: 00

SUB CODE: MM, IE NO REF SOV: 000 OTHER: 000

Card 3/3

ACCESSION NR: AP4025738 S/0184/64/000/001/0030/0032

AUTHORS: Shevelkin, B. N. (Candidate of technical sciences); Toropov, V. A. (Candidate of technical sciences); Gerasimenko, G. I. (Engineer)

TITLE: Titanium lining of containers made of carbon steel

SOURCE: Khimicheskoye mashinostroyeniye, no. 1, 1964, 30-32

TOPIC TAGS: carbon steel, St.3 carbon steel, titanium plate, VT-1 titanium, corrosion, metal corrosion prevention, plating, welding, resistance welding, seam welding, contact-roller welding, welded connection, vacuum technique, leak detection, forging, hot forging, fagot weld

ABSTRACT: This study made it possible to develop the most effective welding procedure for installing unattached titanium linings into carbon steel containers used by the chemical industry. A sectional view of such a container (made of St.3 steel) with 400-liter capacity is presented in Fig. 1 on the Enclosure. Different techniques for welding the linings (6-8 mm thick) to various parts of the container are described. Lids and bottom parts of such vessels were made of welded fagots consisting of two steel disks with a titanium interlayer. Hot forging of the

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ACCESSION NR: AP4025738

fagots at 700-750C secured a good adherence of the lining to carbon steel. The shell of the containers was made of titanium sheets 0.5 mm thick, and called for welding by the contact-roller technique with a 4-6 mm overlap. Collars were stamped (or rolled) from argon-arc welded titanium sheet rings. Seam-welding was resorted to when these collars were attached to the shells. The outlets (50 mm in diameter) were made of titanium 0.5 mm thick. They were welded by a modified contact-roller procedure and were attached to the flanges by automatic argon-arc welding with infusible VT-15 electrodes. Vacuum testing technique was used in leak detection in the containers. The best results were obtained with helium leak testers. The authors claim that the results obtained by them are not inferior to those produced by argon-arc welding alone. They state that the resistance welding technique, which is much simpler of the two, should be applied more often. Orig. art. has: 2 tables and 4 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 14Feb64 ENCL: 01

SUB CODE: ML NO REF SOV: 000 OTHER: 000

Card 2/3

ACCESSION NR: AP4013293 S/0135/64/000/002/0026/0027

AUTHORS: Toropov, V. A. (Candidate of technical sciences); Shevelkin, B. N. (Candidate of technical sciences); Samochatov, I. M. (Engineer); Gerasimenko, G. I. (Engineer)

TITLE: Technology of producing welded devices lined with thin corrosion resistant steel plates

SOURCE: Svarochnoye proizvodstvo, no. 2, 1964, 26-27

TOPIC TAGS: welding, stamping, lining, corrosion resistant steel, Kh18N9T steel, OKh18N10T steel, St3 steel, steel container

ABSTRACT: The article presents a description of the technological procedures used in preparing various parts of cylindrical welded devices for the chemical industry. These parts (up to 1 m in diameter) were lined with corrosion-resistant steel (Kh18N9T and OKh18N10T). In this type of devices the lining was not welded to the steel base; these parts cannot be used for procedures requiring vacuum. The technique used in producing them secured high corrosion stability of welded connections in the steel lining at its minimum thickness. An example of such a device is shown

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ACCESSION NR: AP4013293

in Fig. 1 on the Enclosure. Here the frame and the lid were made of steel St3 8-10 mm thick. The fettling material used consisted of two carbon steel sheets 8 mm thick and an interlayer of corrosion-resistant steel. The interlayer was either solid or consisted of two sheets welded together. The process of fabricating such devices produced a saving of 80 to 90% in steel. Orig. art. has: 1 table, 3 figures, and 4 formulas.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 26Feb64 ENCL: 01

SUB CODE: ML NO REF SOV: 000 OTHER: 000

Card 2/3

SHEVELKIN, B.N., kand. tekhn. nauk; SHIKHOV, Yu.V., kand. tekhn. nauk

Ensure more widespread introduction of pressure working methods. Khim. i neft. mashinostr. no.2:44-46 Ag '64
(MIRA 18:1)

SHEVELKIN, B.N., kand. tekhn. nauk; KRAVCHENKO, L.L., inzh.

Investigating the pressure processability of tantalum and niobium. Khim. i neft. mashinostr. no.1:25-27 Jl '64.
(MIRA 17:12)

L 12838-65 EWT(m)/EWA(d)/EWP(v)/EWP(t)/EWP(k)/EWP(b) Pf-4 ASD(m)-3/
ASD(d7/AFWL/SSD/ESD(dp) MJW/JD/HM/HW

ACCESSION NR: AP4046171 S/0314/64/000/003/0033/0034

AUTHOR: Shevelkin, B. N.(Candidate of technical sciences); Krazchenko, L. L. (Engineer) B

TITLE: Investigation of the pressure machinability of the clad steel St.3-OKh23N28M3D3T 14

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 3, 1964, 33-34

TOPIC TAGS: steel, clad steel, steel sheet, ferrite, pearlite, ductility, bending, drawing, punching, guillotine cutter, peeling, rolling / steel 3, steel OKh23N28M3D3T

ABSTRACT: The mechanical and technological properties of 10-mm-thick sheets of clad steel (base sheet of St.3: 8 mm; cladding sheet of OKh23N28M3D3T: 2 mm), annealed at 900C for 2 hours and quenched in air, were investigated at the NIIkhimmash. The microstructure of the clad steel is illustrated. The structure of steel OKh23N28M3D3T consists of austenite grains, at the boundaries of which a second phase consisting of small carbide particles is found; the base metal St.3 consists of small ferrite and pearlite grains. The variation in the mechanical properties of this clad steel was investigated during short-term heating and cooling. Generally, the strength and yield point decreased on heating and increased on cooling, with the opposite behavior for plasticity. The shear strength in the

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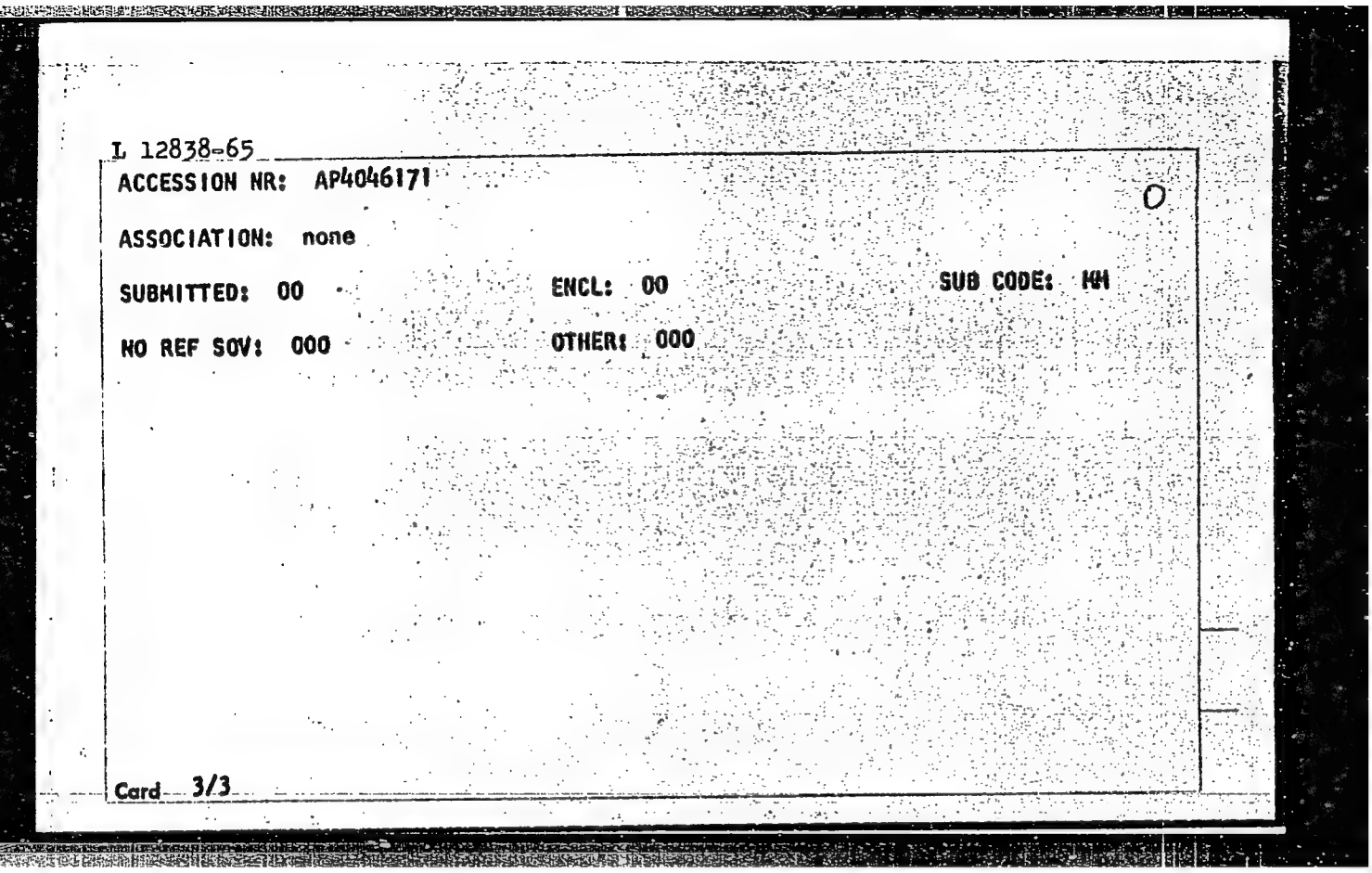
cold is 15.7 kg/mm^2, and the maximum peeling strength is 21.4 kg/mm^2. The effect of prolonged heat treatment on the mechanical and plastic properties of the clad steel was also investigated, showing that repeated heating to 1000C does not decrease the plasticity. Bending tests were made in the cold and over a temperature range of 100-1000C on samples cut transversely to the casting direction. The samples were bent to 180° by stamps with a bending radius of 2--16 mm. The minimum permissible bending radii were determined on both samples clad from outside and samples clad from inside. Drawing of the clad steel was investigated by punching spherical cup-like samples with a diameter of 200 mm in the cold on a hydraulic press under a pressure of 200 tons, from both one-piece and welded (two-piece) ingots. No defects were found in the castings, and the bonding strength of the two layers remained unchanged. The degree of deformation increased from the spherical bottom part toward the edge and reached 25.7%. It was established that drawing of St.3-OKh23N28M3D3T clad steel can be accomplished in the cold from either one-piece or welded ingots. The clad steel was then cut with a guillotine cutter; cutting on the cladding layer produced no peeling, but after cutting, the edges had to be treated. Rolling had to be carried out in the cold. "The metallographic tests were carried out under the direction of A. P. Akshentseva." Orig. art. has: 4 figures and 1 table."



L 12838-65

ACCESSION NR: AP4046171

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 000

Card 3/3

L 32815-66 EWT(m)/EWP(k)/EWP(t)/ETI IJP(c) JD/HW

ACC NR: AP6012588 SOURCE CODE: UR/0314/66/000/004/0039/0042

AUTHOR: Golovanova, A. P. (Engineer); Shevelkin, B. N. (Candidate of technical sciences)

ORG: none

TITLE: Special features in the pressure treatment of two-layer metals

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 4, 1966, 39-42

TOPIC TAGS: sheet metal, metal bonding, metal pressing, metal stamping

ABSTRACT: The pressure treatment of two-layer metal sheets is connected with numerous features related to the differences in the physical and mechanical properties of the basic and cladding layers. The present article offers numerous data collected during tests carried out at the NIIkhimmash. They cover 1) the elastic limits, the changes in the elastic limits and yield points, the relative contraction and elongation, the impact viscosity, and the ultimate strength of the joint of the sheets of two-layer metals as a function of temperature; 2) the initial and final stamping temperature for various cladding layers; 3) cutter parameter

Card 1/2 UDC: 621.9-419:620.16

L 32815-66

ACC NR: AP6012588

data during two-layer metal sheet cutting; and 4) minimum permissible bending radius in cold and hot states. Other comprehensive advice and recommendations concerning two-layer metal technology are also given. Orig. art. has: 1 formula, 1 figure, and 5 tables.

SUB CODE: 11, 13 / SUBM DATE: none / ORIG REF: 004

Card 2/2

SHEVELKIN, D. S.

B. V. RYKUNIN and D. S. Shevelkin, Uproshchennye Samodel'nyye pribory/Simplified Homemade Apparatus/, second edition (From the series "Opyt perodovogo uchitelya" /Experience of the Progressive Teacher/), Uchpedgiz, 6 sheets

Describes simplified homemade apparatus that the pupils can build themselves with a minimum expenditure of materials and money. A detailed sketch showing dimensions is appended to the description of each apparatus.

The apparatus described in this book allow the teacher to make all the basic demonstrations and laboratory work called for by the syllabus for the sixth and seventh grades.

SO: U-6472, 12 Nov 1954

SHEVELKIN, Dmitriy Sergeyevich; RYKUNIN, Boris Vasil'yevich; MIKHALKEVICH, T.B., redaktor; RYBIN, I.V., tekhnicheskiy redaktor.

[Laboratory work in physics with homemade instruments (classes 6 and 7); teacher's manual. Laboratornye raboty po fizike na samodel'nykh priborakh (VI-VII klassy); posobie dlia uchitelia. Moskva, Gos.uchebno-pedagog.izd-vo Ministerstva prosveshcheniia RSFSR, 1955. 77 p. (Physics--Laboratory manuals) (MLRA 9:1)

KUDRYAVTSEV, G.I.; BERNATSKAYA, Ye.E.; SHEVELKIN, L.F.

High-speed forming of polyamide fibers. Tekst. prom. 18 no.2:15-16 F '58. (MIRA 13:3)
(Textile fibers, Synthetic) (Polyamides)

SHEVELKIN, V. D. (g. Ivanovo)

Experimental evaluation of the dimensions of molecules. Fiz. v shkole 22 no.4:61-62 Jl-Ag '62. (MIRA 15:10)

(Molecules) (Physics—Experiments)

1. SHEVELKIN, V. N.

2. USSR (600)

4. Links and Link Motion

7/ Designing a four-link, hinged mechanism on the basis of precise calculation. Trudy Sem po toch mash No. 3. 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

SHEVELKINA, T. S.

The lead-isotope distribution between potassium chromate solution and crystals. M. S. Merkulova and T. S. Shevelkina. M. V. Lomonosov State Univ., Moscow. [illegible] The distribution of Pb between the K_2CrO_4-$Pb(NO_3)_2$-H_2O system with the PbB distributed between the K_2CrO_4 crystals and the soln. The equil. was established in 10 min.; this indicated an adsorption process. The value of $K_d(D)$ function, the adsorption coeff., remains satisfactorily const. for various amts. of the solid phase and at temps. of 25 and 100°. The addn. of multivalent ions ($Al(NO_3)_3$) affects K_d D in concn. even as low as 0.001 mg/20 ml., and reduces it to zero at 0.400 mg/20 ml. The reduction in [illegible] the concn. of $PbCrO_4$ between 1×10^{-4} and 4×10^{-4} millimoles indicates that in the coppta. of Pb with K_2CrO_4 an inner adsorption takes place.

W. M. Sternberg

(1)

Shevelkina, T.S.

USSR/Physical Chemistry - Radiochemistry, Isotopes. B-7

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3731.

Author : M.S. Merkulova, S.A. Potapova, T.S. Shevelkina, V.I. Chastukhina.

Inst :

Title : Distribution of Lead and Radium Isotopes between Solution and Crystals of Anisomorphous Salts.

Orig Pub: Zh. fiz. khimii, 1957, 31, No 5, 1056-1062.

Abstract: The distribution of Pb(ThB) and Ra between the solution and solid phase in K_2SO_4 - $PbSO_4$ - H_2O, K_2SO_4 - $RaSO_4$ - H_2O and K_2CrO_4 - $PbCrO_4$ - H_2O systems was studied at 25 and 100°. The distribution equilibrium was determined in 10 minutes. The crystallization factor D does not depend on the amount of the makrocomponent separated in the precipitate. D is somewhat lower in an acid medium than in a neutral. D depends very much on the temperature. If Bi^{3+} ions were introduced into the sulfate system, or Al^{3+} ions into the chromate system,

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SHEVEL'KO, P., MAJ

USSR/Aeronautics - Aircraft Corrosion

Nov 49

"Preventive Measures Against Corrosion of Aircraft Metal Constructions," Maj P. Shevel'ko

"Vest Vozdush Flota" No 11, pp 55-58

Describes electrochem and chem corrosion occurring on aircraft parts; outlines types of corrosion according to character of metal destruction and suggests preventive measures. Recommends certain rules for servicing airplane and handling parts; specifies methods for renewal of damaged or worn lacquer-paint coatings.

173T7

L 20088-65 EWT(d)/EWT(l)/EWT(m)/FA/EWA(d)/EWP(j)/T-2/T/EWP(t)/EWP(h)/EED-2/EWP(b)/FS(b) Pc-4/Pq-4 SSD/AEDC(a)/AFWL/AS(mp)-2/AFETR/AFTC(a) JWA/TT/JD/MLK/RM

ACCESSION NR AM4049546 BOOK EXPLOITATION S/

Murza, I. S.; Shevel'ko, P. S.; Braga, V. G.; Alekseyev, B. A.; Gorbachev, F. A.; Sulkanov, S. S.

Handbook for an aircraft technician (Spravochnik aviatsionnogo tekhnika), 2d ed. rev., Moscow, Voyenizdat, 1964, 510 p. illus., index. 35,000 copies printed.

TOPIC TAGS: aircraft structure, aircraft material, aviation fuel, aviation lubricant, aircraft radio equipment, thermodynamics, gasdynamics, aviation engine

PURPOSE AND COVERAGE: This manual is intended for aircraft technicians with secondary general or aviation technical education. It can also be useful for flight mechanics in the Air Force and other aviation specialists. The handbook contains brief information on the general disciplines -- physics, thermodynamics, gasodynamics, electrical engineering, radio engineering and the special disciplines -- strength of materials, aviation materials, aircraft strength, aerodynamics, aviation engines, aviation fuels and lubricants.

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FILIPPOV, Vasiliy Vasil'yevich, inzh.-polkovnik; SHEVEL'KO, P.S., inzh.-polkovnik, retsenzent; DRUZHINSKIY, M.V., inzh.-podpolkovnik, red.; SRIBNIS, N.V., tekhn. red.

[Fighting negative thrust occuring in turbo-prop engines; characteristics of the operation of an airplane with a turbo-propengine] Kak letchiku borot'sia s otritsatel'noi tiagoi TVD; ob osobennostiakh raboty i ekspluatatsii na samolete turbovintovogo dvigatelia. Moskva, Voen. izd-vo M-va obor. SSSR, 1961. 57 p. (MIRA 14:9)

(Airplanes—Turbine-propeller engines)

MURZA, I.S.; SHEVEL'KO, P.S.; HRAGA, V.G.; ALEKSEYEV, B.A.; GORBACHEV, F.A.; SUKHANOV, S.S.; NEFEDOV, D.I., inzh.-polkovnik zapasa, red.; VYZVILKO, S.A., inzh.-kapitan 2 ranga, red.; SOLOMONIK, R.L., tekhn. red.

[Manual for an aircraft technician] Spravochnik aviatsionnogo tekhnika. Moskva, Voen. izd-vo M-va obor. SSSR, 1961. 510 p. (MIRA 15:3)

(Airplanes)

SHEVEL'KO, P.S., inzhener-polkovnik

Technical councils on operations. Vest.Vozd.Fl. no.7:71-72 Jl '61. (MIRA 14:8)

(Airplanes, Military--Maintenance and repair)

SHEVELKO, Ye.A.

U.S.S.R. / Human and Animal Physiology. Thermoregulation. T

Abs Jour: Ref Zhur-Biol., No 5, 1958, 22033.

Author : Shevelko, E. A.
Inst : Institute of Experimental Med. Acad. Med. Science U.S.S.R. Leningrad.
Title: : The Function of the Thermoregulation Mechanism in Diptheritic Toxemia and Staphylococcic Infection.

Orig Pub: Ezhegodinik Just. eksperim. med. Akad. Med. nauk SSSR, 1955, L., 1956, 132-136.

Abstract: The experimental diptheritic intoxication in rabbits is characterized by biphasic behavior of the T° curve; an elevation of 1° -2° in the first and second day followed by a lowering of 4° -6°. In the initial phase, artificial heating in a heat chamber (36-37°) for a period of

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T-3

USSR/Human and Animal Physiology. Thermoregulation.

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55359.

Author : Shevel'ko, Ye. A.
Inst :
Title : The Influence of Overheating Upon the Development of Assimilative Thermoregulative Reaction in Rabbit Fever.

Orig Pub: V sb.: Fiziol. Mekhanizmy Likhoradochn. reaktsii, L., Medgiz, 1957, 40-46.

Abstract: When feverish rabbits (fever was induced by administering pyrogenic substances, paratyphoid bacteria, diphteria bacteria, and α-dinitrophenol) were subjected to overheating which lasted $1\frac{1}{2}$-3 hours, their rectal temperature during this

Card : 1/2

T

USSR/Human and Animal Physiology. Thermoregulation.

Abs Jour: Ref Zhur-Biol., No 20, 1958, 93053.

Author : Bystrova, L.N., Shevel'ko, Ye. A.
Inst :
Title : Influence of Fever Caused by Prolonged Repeated Introduction of Pyrogenal upon the Rabbit Organism.

Orig Pub: V sb.: fiziol. mekhanizmy likhoradochn. reaktsii, L., Medgiz, 1957, 329-332.

Abstract: A study was made of the influence of repeated paroxyms of fever in rabbits provoked by a 25 - 27-day course of intravenous injections of a purified bacterial polysaccharide, Pyrogenal (I). 5 γ per kg of I was introduced into a physiological solution. After 1 hour the rectal temperature rose in all of the animals, and it became normal after 3 - 6 hours. The degree of

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temperature elevation and the continuance of the fever reaction did not depend on the number of previous injections of I, but several phases were noted in the degree of elevation depending on the day of injection of I. From the 6th through the 10th day the reaction was least intensive, and from the 16th through the 20th it was most pronounced. Introduction of a dose of I, increased 10 - 50-fold, did not evoke any signs of intoxification. The gas metabolism did not increase. The maximal elevation in the temperature of the skin of the ear and the back occurred at the moment of the lowering of the rectal temperature. Judging by changes in the temperature of the skin, the basis of the elevation in the body temperature under the influence of I was the restricted emission of heat. Further experi-

SHEVEL'KO, Ye.A.

Thermal regulation and febrile reaction in puppies at various stages of postnatal ontogenesis. Fiziol. zhur. 47 no.6:728-734 Je '61. (MIRA 15:1)

1. From the Department of General Pathology, Institute of Experimental Medicine, Leningrad.
(BODY TEMPERATURE--REGULATION) (FEVER)

SHEVEL'KO, Ye.A.

Comparative characteristics of thermoregulation and pyrogenic activity in mice from the gray and white race; data on comparative physiology and pathology of thermoregulation. Fiziol.zhur. 48 no.6:748-753 Je '62. (MIRA 15:8)

1. Laboratoriya obshchey patologii Instituta eksperimental'noy meditsiny AMN SSSR, Leningrad.
(BODY TEMPERATURE--REGULATION)

SHERMAN, [illegible].

[illegible] of pyrogen reactivity in connection with age-related formation of the heat-regulation function. Fiziol.zhur. 51 no.7:877-883 '65. (MIRA 18:10)

1. Otdel sravnitel'noy fiziologii i otdel obshchey patologii Instituta eksperimental'noy meditsiny AMN SSSR, Leningrad.

L 27644-66
ACC NR: AP6018516 SOURCE CODE: UR/0239/65/051/007/0877/0883

22
B

AUTHOR: Shevel'ko, Ye. A.

ORG: Department of Comparative Physiology, Institute of Experimental Medicine, AMN SSSR, Leningrad (Otdel sravnitel'noy fiziologii Instituta eksperimental'noy meditsiny AMN SSSR); Department of General Pathology, Institute of Experimental Medicine, AMN SSSR, Leningrad (Otdel obshchey patologii Instituta eksperimental'noy meditsiny AMN SSSR)

TITLE: Ontogenesis of reactivity to pyrogens in relation to age-conditioned development of the function of thermal regulation

SOURCE: Fiziologicheskiy zhurnal SSSR, v. 51, no. 7, 1965, 877-883

TOPIC TAGS: rabbit, experiment animal, body temperature, biologic metabolism

ABSTRACT: The reaction to pyrogens was studied in rabbits 7-60 days old and in guinea pigs 2-35 days old. Bac. mesentericus vaccine and pyrogenal were used as pyrogens for guinea pigs, and Bac. mesentericus vaccine and a paratyphoid culture, for rabbits. The development of the function of thermal regulation with age was also studied and the capacity for a fever reaction correlated with it. A typical cyclic fever reaction, such as that exhibited by adult animals, was not shown by young rabbits, in which chemical thermoregulation predominated; their response consisted mainly of a nonspecific increase in metabolism, as shown by the fact that the O_2 consumption increased together with an abnormal increase (as compared with adult rabbits) in the body temperature. A fever reaction accompanied by regulation of heat loss

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was shown by rabbits 69 days old, in which the vascular reaction was fully developed and the daily fluctuations of the temperature were reduced. As distinguished from rabbits, guinea pigs exhibited the same fever reaction as adult animals from the first days of life. Excessive oxidative heat formation shown by young guinea pigs was not connected with the action of pyrogens, because injection of a physiological saline solution also initiated it. Orig. art. has: 4 figures. [JPRS]

SUB CODE: 06/ SUBM DATE: 13Feb64 / ORIG REF: 006/ OTH REF: 004

Card 2/2 CC

127-58-7-14/20

AUTHOR: Shevel'kov, I.K., Mining Engineer

TITLE: Ways of Placing Dumptrucks for Loading by Excavators (Sposoby ustanovki avtosamosvalov pod pogruzku ekskavatorom)

PERIODICAL: Gornyy zhurnal, 1958, Nr 7, pp 71-72 (USSR)

ABSTRACT: The author calculated the time used by an excavator to load the dumptruck. The truck was placed in different positions and at different angles. The author found that the best way was to place the dumptruck so that the axis of the truck formed an angle of 90° with the axis of the arm of the excavator. He also found that the truck must be placed so that the excavator could turn to the right. Movements to the left increased the loading time and often damaged the truck by blows of the scoop against the cab.
There are 2 drawings and 2 tables.

ASSOCIATION: Shedokskiy gipsovyy rudnik (The Shedok Gypsum Mine)

Card 1/1 1. Loaders-Test results

SHEVEL'KOV, I. K., Cand of Tech Sciences --- (diss) "Search of Efficient Systems for Complex Mechanization of Small Open Pits, " Moscow, 1959, 15 pp (Ministry of Higher ~~and Secondary Specialiskx~~ Education USSR. Krasnoyarsk Institute of Non-Ferrous Metals imeni Kalinin.) (KL, 6-60, 123)

SHEVEL'KOV, V.F.; MAL'TSEV, A.A.

Electron emission and absorption spectra of vapors of oxygen compounds of gallium and indium. Teplofiz. vys. temp. 3 no.3:486-487 My-Je '65. (MIRA 18:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

S/0294/64/002/004/0650/0653

ACCESSION NR: AP4044532

AUTHORS: Mal'tsev, A. A.; Shevel'kov, V. F.

TITLE: Infrared absorption spectra of Al_2O, Ga_2O, In_2O, and Al_2S molecules

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 4, 1964, 650-653

TOPIC TAGS: absorption band, absorption spectrum, aluminum oxide, indium, gallium, oscillation/GOI instrument, MGU instrument

ABSTRACT: The absorption spectra of aluminum, gallium, and indium suboxides together with aluminum subsulfide were studied experimentally in their vapor phase. The spectra were measured on the GOI instrument in the wavelength region 230-600 cm^{-1} in Professor B. S. Neporent's laboratory and in the region 600-2000 cm^{-1} on the MGU instrument of the faculty of chemistry. The Al_2O_3 + 4Al mixture shows only one absorption band with a maximum at 950 cm^{-1}. In the Ga_2O and In_2O spectra three absorption bands are noticeable: 420, 770, 1140 cm^{-1} for gallium oxide and 360, 680, 940 cm^{-1} for indium oxide. Finally, Al_2S_3 + 4Al shows one wide absorption band at 430 cm^{-1}. In the Al_2O, Ga_2O, and In_2O absorption bands

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the maxima at 950, 770, and 680 cm^{-1} coincide with the oscillation frequency of the double-atom molecules AlO, GaO, and InO. The absorption results show that the linear geometrical configurations of Al_2O and Al_2S depart from the angular configurations of Ga_2O and In_2O. "The authors express their gratitude to GOI colleague V. I. Baykov and to K. P. Vasilevskiy for allowing them to use their instruments and for their help." Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 04May64 ENCL: 00

SUB CODE: OP NO REF SOV: 010 OTHER: 011

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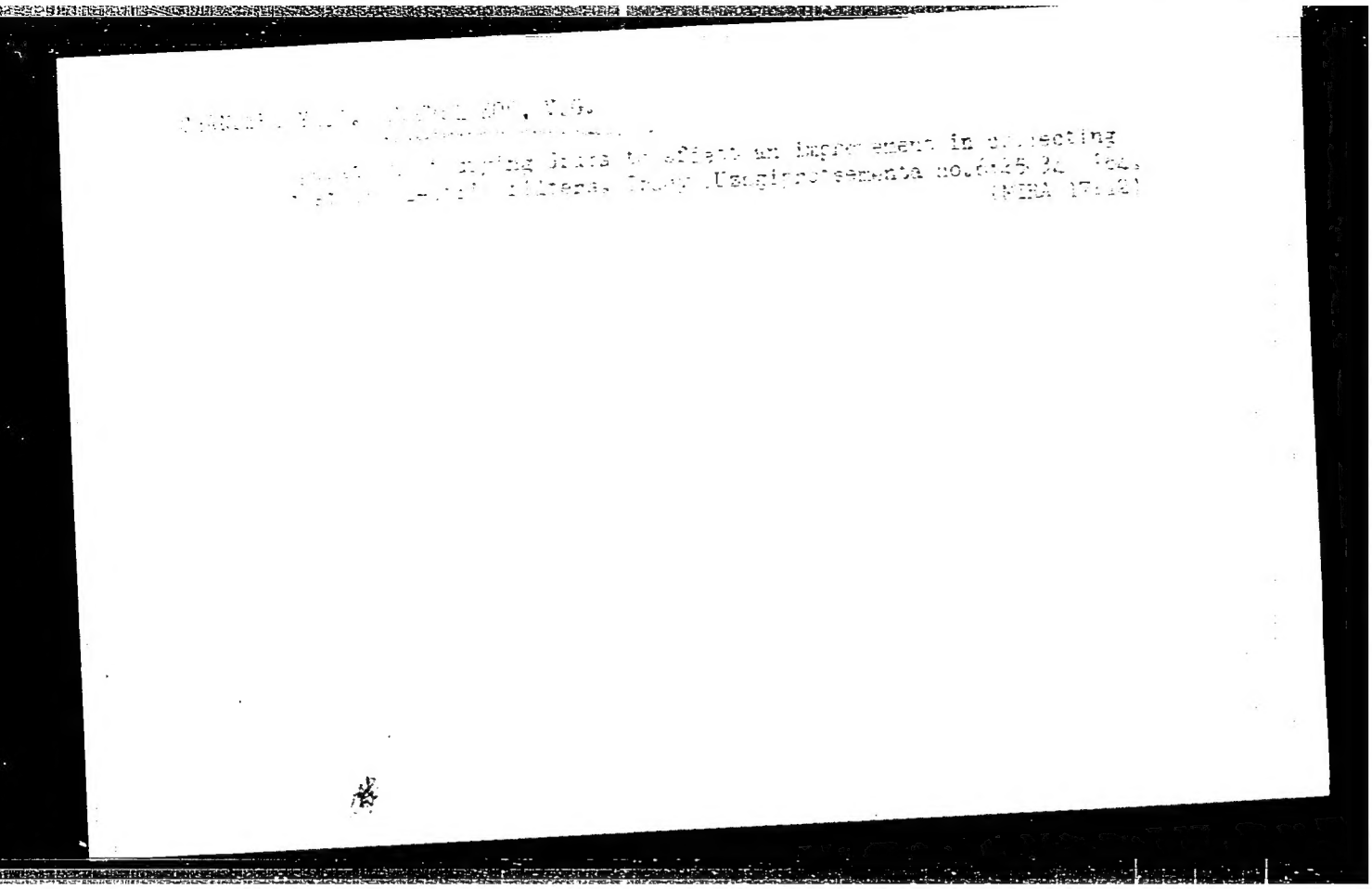

PERLI, S.B., kand.tekhn.nauk; MEL'NICHENKO, N.P., inzh.; SHEVEL'KOV, V.G., inzh.; CHANDER, Yu.I., inzh.

Improvement in gas purification in electrostatic precipitators of drying drums. TSement 30 no.6:17-19 N-D '64. (MIRA 18:1)

1. Gosudarstvennyy institut po proyektirovaniyu tsementnykh zavodov v yuzhnykh rayonakh SSSR.